

Abstract

USE OF PHOTONIC BAND GAP STRUCTURES IN OPTICAL AMPLIFIERS

- 5 An optical amplifier uses a photonic band gap structure having a doped core defining at least a first wavelength range over which stimulated emission can occur after excitation caused by the introduction of pump light. The photonic band gap structure is designed to permit light
- 10 having energy corresponding to the wavelength range to be transmitted only in selected directions, including along the photonic band gap structure. The propagation down the structure is one of a discrete number of possible transmission directions for the photons resulting from
- 15 stimulated emission. This improves the pump efficiency, as the stimulated emissions are concentrated into the direction of propagation down the fiber.

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